

with regard to in vitro resistance, SCCmec type, frequency of pvl gene and MLST type.

There have rare report about molecular characteristic of CA-MRSA infections in children from China, this prospective study was undertaken in order to characterize the molecular characteristic of CA-MRSA in children in China. We collected 99 CA-MRSA isolates from 8 hospitals in 7 cities in China between 2008 and 2009. All isolates were analysed by a combination of different genotyping methods, including MLST, SCCmec type, and spa typing, pvl gene was also detected.

In all of the CA-MRSA isolates, twelve STs were obtained, and ST59 (58.6%) was the most prevalent type throughout China. SCCmec type IV (67.7%) was the most popular type, and subtypes IVa, IVc, IVg were found in 77.6%, 11.9%, 2.9% of those isolates respectively. Eleven spa types were identified, and four new spa types were firstly registered on the net in our findings. ST59-SCCmec IVa with t437, was the most prevalent clone. In addition, 57.6% of those isolates were PVL positive. CA-MRSA isolates were found to be resistant to non- $\beta$ -lactam antimicrobial, and multidrug resistance was observed in 85.9% of them.

In conclusion, the recent increase in CA-MRSA infections in children of China is largely associated with the spread of the ST59-SCCmec IVa with t437 clone and the multiresistant rate is high.

### Concurrent Session 17 – End Stage Liver Diseases and Complications

#### CS17-01 Management of Hepatitis Related Liver Cirrhosis (TBC)

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#### CS17-02 Non-Invasive Assessment of Liver Fibrosis and Cirrhosis

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Fibrosis is a frequent, life-threatening complication of most chronic liver diseases. Up to now liver biopsy is still the gold standard for assessment of hepatic fibrosis and cirrhosis. However, it is invasive with possible complications, costly and afflicted with a high degree of sampling error. There is a strong demand for reliable, liver specific, non-invasive biomarkers of fibrosis and cirrhosis to replace or to complement the invasive method of needle biopsy. Class I biomarkers are defined as serum components which reflect ECM turnover (fibrogenesis and fibrolysis) and fibrogenic cell changes, mainly of hepatic stellate cells, which are the dominant profibrogenic cell type in liver. The development of hepatic fibrosis or cirrhosis is due to increased synthesis, deposition, and possibly reduced degradation of hepatic extracellular matrix components, especially collagens, such as interstitial type I and III, basement membrane type IV, microfibrillar type VI, and pericellular type V, non-collagenous proteins, such as laminin, fibronectin, undulin, etc. Class II biomarkers comprise in general rather simple standard laboratory tests, which are grouped into panels. Class II biomarkers are based on algorithmic evaluation of commonly observed functional alterations of the liver that do not necessarily reflect ECM metabolism and/or fibrogenic cell changes. About 20 numerical scores or indices are reported for parameters, which are mostly routine laboratory tests and frequently multiparametric (panels). They fulfil most criteria for detection and staging of fibrosis and to a lesser extent grading of fibrogenic activity. The Fibrotest is the most investigated combination of serum markers for fibrosis. However, the diagnostic

use of many of these scores is still limited and standardization of the assays is only partially realized. Transient elastography (Fibroscan), which measures the stiffness of the liver by means of ultrasound as a measure of fibrosis and cirrhosis, is simple to perform and the inter- and intra-observer variability is small. The accuracy is high in discriminating between cirrhosis and fibrosis, but lower for discriminating between the different stages of fibrosis in both chronic hepatitis B and C. All the makers of liver fibrosis can be combined for a better diagnosis.

#### CS17-03 Clinical Implications of Spontaneous Bacterial Peritonitis Due to Antibiotic-Resistant Microorganism

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**Background:** Spontaneous bacterial peritonitis (SBP) is a major cause of morbidity and mortality in cirrhosis patients. Gram negative bacilli, such as *Escherichia coli* and *Klebsiella* species (EK) are the most common cause of SBP. Recently, infections due to antibiotic-resistant microorganism have increased, especially by extended-spectrum  $\beta$ -lactamase-producing EK (ESBL-EK). However, among SBP in patients with advanced liver cirrhosis, the impacts of antibiotic-resistant (including ESBL-producing) organisms on clinical outcome and risk factors for infection have not been well focused.

**Aims & Methods:** Electronic searches in MEDLINE and EMBASE about SBP in patients with advanced liver cirrhosis were performed to elucidate clinical implications of SBP due to antibiotic-resistant microorganism.

**Results:** SBP due to microorganism which was resistant to third generation cephalosporin accounted for 5~15%. SBP due to antibiotic-resistant organism had poorer outcome than SBP by antibiotic-susceptible strain. Especially, 30-day mortality of SBP due to ESBL-EK was very high (about 50%). And the risk factors for the development of infection with antibiotic-resistant organisms that have been listed in several studies are: underlying severe hepatic dysfunction, nosocomial infection, longer hospital stay and ICU stay, presence of indwelling vascular catheter, prior administration of an antibiotic and higher severity of illness. Although the impact of a delay in effective initial treatment was controversial, several studies suggest that ineffective initial therapy may be a cause of the higher mortality.

**Conclusions:** SBP due to antibiotic-resistant organism had higher mortality than SBP by susceptible strain and ineffective initial therapy may be a cause of the higher rates of treatment failure and mortality. Therefore, it would seem reasonable to treat patients with SBP due to antibiotic-resistant organism with effective antibiotics straight away. However, the injudicious use of broad antimicrobial regimens is likely to result in further emergence of resistance. To promote the prudent use of antimicrobial agents, we need further efforts to identify the risk factors for antibiotic-resistant infection.

### Concurrent Session 18 – Pneumonia – Yesterday, Today and Tomorrow

#### CS18-01 Pneumococcal Diseases in the 21st Century

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The introduction of the 7-valent (types 4, 6B, 9V, 14, 18C, 19F and 23F) pneumococcal conjugate vaccine has brought a significant reduction in invasive pneumococcal disease in the United States and Europe. In the  $\leq 2$  years old, the incidence of pneumococcal bacteraemia has decreased from 188 to 59/100,000